

Title (en)

Monolithic timepiece regulator, timepiece movement and timepiece having such a timepiece regulator

Title (de)

Monolithischer Uhrregler, Uhrwerk und Uhr mit einem solchem Uhrregler

Title (fr)

Régulateur d'horlogerie monolithique, mouvement d'horlogerie et pièce d'horlogerie comportant un tel régulateur

Publication

EP 3021174 A1 20160518 (EN)

Application

EP 14193516 A 20141117

Priority

EP 14193516 A 20141117

Abstract (en)

Monolithic timepiece regulator (7) made in a single plate (9), comprising an external rigid element (10), an internal rigid element (11), and elastic suspensions (12) connecting the external rigid element to the internal rigid element and enabling oscillatory rotating movements between them. The internal rigid element has arms (13) which are rigidly connected with one another, leaving between each other free angular spaces (14), and the elastic suspensions are located in these free angular spaces.

IPC 8 full level

G04B 17/04 (2006.01)

CPC (source: CN EP KR US)

G04B 17/04 (2013.01 - CN EP KR US); **G04B 17/045** (2013.01 - EP US); **G04B 17/10** (2013.01 - EP US)

Citation (applicant)

US 2013176829 A1 20130711 - CUSIN PIERRE [CH], et al

Citation (search report)

- [XDI] US 2013176829 A1 20130711 - CUSIN PIERRE [CH], et al
- [A] EP 2645189 A1 20131002 - NIVAROX SA [CH]
- [A] EP 2273323 A2 20110112 - MANUF ET FABRIQUE DE MONTRES ET DE CHRONOMETRES ULYSSE NARDIN LE LOCLE S A [CH]

Cited by

NL2023823B1; NL2023822B1; CN114041090A; EP3206089A1; JP2017142246A; EP3561606A1; CN110412854A; US11454934B2; EP3451072A1; EP3451074A3; WO2024100597A1; US10928779B2; US11022942B2; EP3545363B1; WO2017220672A1; US11520289B2; US9958831B2; EP3355130A1; WO2018095594A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

EP 3021174 A1 20160518; CN 107257944 A 20171017; CN 107257944 B 20200619; DE 202015009912 U1 20210707; EP 3221754 A1 20170927; EP 3221754 B1 20240814; JP 2017534892 A 20171124; JP 6695889 B2 20200520; KR 20170124525 A 20171110; US 10133238 B2 20181120; US 2017322517 A1 20171109; WO 2016079068 A1 20160526

DOCDB simple family (application)

EP 14193516 A 20141117; CN 201580065960 A 20151116; DE 202015009912 U 20151116; EP 15794928 A 20151116; EP 2015076716 W 20151116; JP 2017544991 A 20151116; KR 20177016527 A 20151116; US 201515526493 A 20151116